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WO 2004/045530 A3

(54) Title: METHODS FOR TREATING, PREVENTING, OR REDUCING CARDIAC DISORDERS USING FADD INHIBITORS

(57) Abstract: The present invention relates to methods for treating or preventing cardiac disorders such as heart failure, by administering to a mammal a therapeutically effective amount of an FADD inhibitor. According to the present invention, the FADD inhibitor is anti-apoptotic, anti-inflammatory, or both. Also disclosed are screening methods that make use of FADD for the identification of novel therapeutics for treating or preventing cardiac disorders.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/36624

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : A01N 63/00; A61K 48/00; C12Q 1/00; C12N 15/00,09,63,70,74,85,86,87  
 US CL : 424/93.2,93.21; 435/4,320.1,455,456

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
 U.S. : 424/93.2,93.21;435/4,320.1,455,456

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
 Please See Continuation Sheet

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CHAO et al. Role of FADD in hypoxia- and serum deprivation-induced cardiomyocyte apoptosis, page 293.	33, 34, 38, 39, 56-64
Y		29, 30, 35, 40
X	CHAO et al. Importance of FADD signaling in serum deprivation- and hypoxia-induced cardiomyocyte apoptosis The Journal of Biological Chemistry. 30 August 2002, Vol 277, No. 35, pages 31639-31645.	1, 4, 14, 16, 17, 19, 31-34, 36-39, 41, 43-45, 47, 49, 50, 52-54, 56-64
X	SRINIVASula et al FLAME-1, a novel FADD-like anti-apoptotic molecule that regulates fas/TNFR1-induced apoptosis The Journal of Biological Chemistry. 25 July 1997, Vol 272, No. 30, pages 18542-18545.	2, 6, 7, 9, 10, 11, 12, 13, 21, 27-30, 35, 40
		1, 4, 14, 16, , 17, 56-64

 Further documents are listed in the continuation of Box C. 

See patent family annex.

* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"B" earlier application or patent published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reasons (as specified)	"Z"	document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means		
"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

14 May 2004 (14.05.2004)

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## INTERNATIONAL SEARCH REPORT

## C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X — Y	US 6,242,569 B1 (SHU et al) 05 June 2001 (05.06.2001), see whole document, especially columns 2-6.	56-64 — 1, 2, 14, 16, 17, 21, 22, 25, 26, 27, 31, 35, 36, 40-45, 47, 55
X,P	US 6,605,426 B1 (GOLDMAKHER et al) 12 August 2003 (12.08.2003), see whole document, especially columns 20-32.	1-6 and 8-64
A	BOWEN-POPE et al Apoptosis of smooth muscle cells is not silent: Fas/FADD initiates a program of inflammatory gene expression TCM 2001, Vol 11, No. 1, pages 42-45.	1-21

**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/US03/36624

**Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)**

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claim Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claim Nos.: 7 because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:  
Claim 7 depends on itself.
  
3.  Claim Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

  

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

PCT/US03/044

**Continuation of B. FIELDS SEARCHED Item 3:**

WEST2.1, STN

search terms: FADD, anti-apoptotic, anti-inflammatory, cardiomyocytes, heart, cardiac, dominant negative, inhibitor, vector, assay, screening